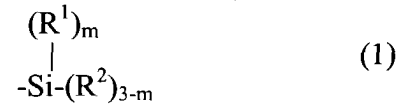
What is claimed is:

1. A polyvinyl alcohol obtained by hydrolysis of a polyvinyl ester comprising polymerized silyl group functionalized monomer units of formula (1):



(1)

wherein $R^1$ represents an alkyl group having from 1 to 5 carbon atoms; $R^2$ represents an alkoxyl or acyloxyl group; and m is an integer of from 0 to 2,

which satisfies the following formulae (I):

$$20 < Pw \times S < 460 \qquad (I)$$

wherein Pw is the weight average degree of polymerization of the polyvinyl alcohol; and S is the content (mol%) of the silyl group functionalized monomer units of formula (1) in the polyvinyl alcohol, and

wherein the weight fraction of the polyvinyl alcohol molecules having a degree of polymerization that is more than 3 times the weight-average degree of polymerization of the entire amount of polyvinyl alcohol is at most 25% by weight of the polyvinyl alcohol.

2. The polyvinyl alcohol as claimed in claim 1, wherein the weight fraction of the polymer molecules having a degree of polymerization that is smaller than 1/2 times the weight average degree of polymerization of the entire amount of polyvinyl alcohol is at most 12% by weight.

3. The polyvinyl alcohol as claimed in claim 1, which satisfies the following formula (II):

$$0.1/100 \leq (A - B)/(B) \leq 50/100 \qquad (II)$$

wherein A is the silicon atom content of the polyvinyl alcohol in ppm; B is the silicon atom content of the polyvinyl alcohol in ppm after the polyvinyl alcohol has been washed with a sodium hydroxide-containing methanol solution and then washed by Soxhlet extraction with methanol, and A and B are measured by ICP emission spectrometry of an ashed sample of the polyvinyl alcohol, and

wherein an aqueous 4 % solution of the polyvinyl alcohol has a pH of from 4 to 8.

4. A coating agent that contains the polyvinyl alcohol of any one of claims 1 to 3.

5. A coated article produced by applying the coating agent of claim 4 to a substrate.

6. An inkjet recording material produced by applying the coating agent of claim 4 to a substrate.

7. A thermal recording material produced by applying the coating agent of claim 4 to a substrate.

8. The polyvinyl alcohol as claimed in claim 1, wherein $R^2$ is an alkoxyl or acyloxyl group having an oxygen-containing substituent.

9. The polyvinyl alcohol as claimed in claim 1, wherein
$50 < Pw \times S < 420$.

10. The polyvinyl alcohol as claimed in claim 1, wherein
$100 < Pw \times S < 390$.

11. The polyvinyl alcohol as claimed in claim 3, wherein
$0.3/100 \leq (A\text{-}B)/(B) \leq 25/100$.

12. The polyvinyl alcohol as claimed in claim 3, wherein
$0.4/100 \leq (A\text{-}B)/(B) \leq 20/100$.

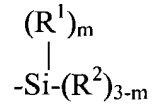
13. The polyvinyl alcohol as claimed in claim 1 having a degree of hydrolysis of at least 98 mol%.

14. The polyvinyl alcohol as claimed in claim 1, wherein the hydrolyzed silyl group functionalized monomer units are present in an amount of from 0.05 to 1.0 mol%.

15. The polyvinyl alcohol as claimed in claim 1, wherein the hydrolyzed silyl group functionalized monomer units are present in an amount of from 0.2 to 0.5 mol%.

16. A method for producing the polyvinyl alcohol of claim 1, which comprises:

copolymerizing a vinyl ester monomer with a monomer having a silyl group of formula (1) to form a polyvinyl ester:

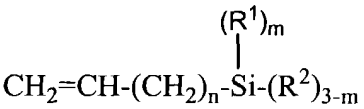


(1)

wherein $R^1$ represents an alkyl group having from 1 to 5 carbon atoms; $R^2$ represents an alkoxyl or acyloxyl group; and m is an integer of from 0 to 2,

and then hydrolyzing the polyvinyl ester.

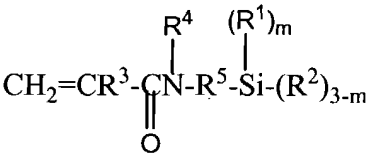
17. The method as claimed in claim 16, wherein the monomer is represented by formula (2):



(2)

wherein $R^1$ represents an alkyl group having from 1 to 5 carbon atoms; $R^2$ represents an alkoxyl or acyloxyl group; m indicates an integer of from 0 to 2; and n is an integer of from 0 to 4,

or by formula (3):



(3)

wherein $R^1$ represents an alkyl group having from 1 to 5 carbon atoms; $R^2$ represents an alkoxyl or acyloxyl group; $R^3$ represents a hydrogen atom or a methyl group; $R^4$ represents a hydrogen atom, or an alkyl group having from 1 to 5 carbon atoms; $R^5$ represents an alkylene group having from 1 to 5 carbon atoms, or a divalent hydrocarbon group that contains an oxygen or nitrogen atom; and m is an integer of from 0 to 2.

18. The method as claimed in claim 16, wherein $R^2$ is an alkoxyl or acyloxyl group having an oxygen-containing substituent.

19. The method as claimed in claim 16, wherein the vinyl ester monomer is vinyl acetate and the monomer having a silyl group of formula (1) is vinyl trimethoxy silane.